

Claims

We claim:

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1. A process for obtaining single enantiomer *d-threo*-methylphenidate or *l-threo*-methylphenidate, which comprises resolution of a mixture of the *d-threo*-methylphenidate and *l-threo*-methylphenidate enantiomers; racemisation of the unwanted enantiomer, to give a mixture of all four stereoisomers, wherein the equilibrium of said racemisation proceeds in favor of the *d-threo* and *l-threo* stereoisomers over the *d-erythro* and *l-erythro* stereoisomers of methylphenidate; and separation of the *d-erythro* and *l-erythro* stereoisomers, to leave the said mixture of *d-threo*-methylphenidate and *l-threo*-methylphenidate enantiomers for resolution.

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2. The process, according to claim 1, wherein the single enantiomer obtained is the *d-threo* isomer, *i.e.*, the isomers of (*R,R*) absolute configuration.

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3. The process, according to claim 1, wherein the racemisation comprises heating the unwanted enantiomer with a carboxylic acid, wherein said carboxylic acid is achiral.

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4. The process, according to claim 1, wherein the separation is conducted following hydrolysis of the mixture of stereoisomers, to give ritalinic acid, and before or after re-esterification of the acid.

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5. The process, according to claim 4, which additionally comprises equilibrating the product of hydrolysis wherein the *threo* diastereoisomer is preferentially obtained.

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6. The process, according to claim 1, wherein the resolution is conducted using a chiral acid.

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7. The process, according to claim 6, wherein the acid is *O,O'*-ditoluoyltartaric acid.